ORIGINAL

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
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Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band, to Reallocate the 29.5 - 30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services	)	CC Docket No. 92-297

To: The Commission

COMMENTS OF BELLSOUTH

BELLSOUTH CORPORATION
BELLSOUTH TELECOMMUNICATIONS, INC.
BELLSOUTH ENTERPRISES, INC.

John F. Beasley
William B. Barfield
Jim O. Llewellyn
1155 Peachtree Street, N.E., Suite 1800
Atlanta, Georgia 30309-3610
(404) 249-4445

Charles P. Featherstun
David G. Richards
1133 21st Street, N.W., Suite 900
Washington, D.C. 20036
(202) 463-4132

Their Attorneys

September 7, 1995

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BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth Enterprises, Inc. (collectively "BellSouth") hereby submit these comments in response to the Commission's *Third Notice of Proposed Rulemaking and Tentative Decision*, FCC 95-287 (released July 28, 1995) ("*Notice*") in this proceeding. In the *Notice*, the Commission sought comment on a plan to allow Local Multipoint Distribution Service ("LMDS") systems, Fixed Satellite Service ("FSS") systems, and Mobile Satellite Service ("MSS") system feeder links to operate in the 27.5 - 29.5 GHz (28 GHz) frequency band. In these comments, BellSouth focuses upon the Commission's proposals for LMDS systems.

SUMMARY

The Commission has defined LMDS as "a fixed microwave service that will offer two-way video communications, including video distribution, teleconferencing, telemedicine, and data

services."[1] It expects that the service will provide competition to franchised cable television operators and wireline local exchange carriers. *Notice* at ¶ 27. By using a cellular design to establish links with consumers, LMDS providers may combine such traditionally separate services as telephony, video services, data transfers, and interactive transactions. *Id.* at ¶¶ 27-28. BellSouth supports the Commission's efforts to open the 28 GHz band to provide such services, which will provide consumers with additional means of quick and efficient access to basic and advanced telecommunications services. In particular, BellSouth supports the band segmentation plan the Commission proposes for LMDS but opposes the proposed prohibition against subscriber equipment transmitting in the 150 MHz shared band. Such a restriction would severely impact the useful bandwidth of the system and its spectral efficiency by requiring the use of "guardbands."

BellSouth concurs with the Commission's tentative conclusion that 1,000 MHz is the minimum amount of spectrum necessary to support a successful LMDS system. BellSouth also agrees with the Commission's proposal to allow geographic partitioning of LMDS licenses in an effort to ensure rapid deployment. Further, because LMDS is still in its infancy, BellSouth believes that there should be open eligibility for LMDS licenses and successful bidders should be allowed to specify the type of service they will offer and the regulatory status they should be assigned. Such flexibility will advance "the Commission's goals of ensuring that the communications needs of the public are met by allowing marketplace forces to shape the development of service providers."[2] Regardless of the type of services provided, however, the radio authorization granted to winning bidders should obviate the need for Section 214 filings.

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[1] "FCC Proposes Band Plan for LMDS, FSS and MSS," Report No. DC 95-100 at 1 (July 13, 1995) (*Band Plan for LMDS*).

[2] *Local Multipoint Distribution Service*, CC Docket 92-297, *Notice of Proposed Rulemaking, Order, Tentative Decision and Order on Reconsideration*, 8 F.C.C.R. 557, 561 (1993), *pets. for recon. pending*; *Second Notice of Proposed Rulemaking*, 9 F.C.C.R. 1394 (1994).

Since auctions will be used to award LMDS licenses, BellSouth opposes the proposed build-out requirements. It simply will be too expensive for licensees to engage in warehousing and, as the Commission recognized, a strict build-out requirement may hamper the development of LMDS.

BellSouth supports the Commission's proposal to require that applicants coordinate frequencies among themselves at their service area boundaries and that licensees employ orthogonally-polarized signals. With regard to the equivalent isotropically radiated power ("EIRP"), BellSouth believes that two different maximums are necessary: -52 dBW/Hz for the hub-to-subscriber link and -18 dBW/Hz for the subscriber-to-hub link. Finally, BellSouth supports requiring LMDS to comply with a spectral efficiency of at least 1.0 bps/hz. This is the current requirement for digital modulated systems and is a reasonable measure of spectral efficiency.

BACKGROUND

Currently, the 28 GHz frequency band is allocated for fixed service, fixed-satellite uplinks, and mobile service. *See* 47 C.F.R. § 2.106. Although fixed point-to-point use is permitted in this band under Part 21, there are currently no provisions for fixed point-to-*multipoint* service. In 1991, the Commission waived its rules and granted the application of the predecessor-in-interest to CellularVision of New York, L.P. ("CellularVision") for a license to provide LMDS in the 27.5 - 28.5 frequency band. *Notice* at ¶ 8. Thereafter, nearly 1,000 similar waiver requests were filed, *see id.*, but the Commission denied these applications and instituted a freeze on new waiver applications. *See Petitions for Redesignation of the Common Carrier Point-to-Point Microwave Radio Service Frequency Band 27.5 GHz - 29.5 GHz, Order*, 7 F.C.C.R. 7201 (C.C.B. 1992).

In response to petitions for rulemaking filed by CellularVision and others, the Commission instituted this proceeding by issuing its first *Notice of Proposed Rulemaking*.[3] It tentatively

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[3] *Local Multipoint Distribution Service*, CC Docket 92-297, *Notice of Proposed Rulemaking, Order, Tentative Decision and Order on Reconsideration*, 8 F.C.C.R. 557 (1993) ("*First NPRM*"),

concluded that greater use of the 28 GHz frequency band would result from allowing fixed point-to-multipoint use of the band by LMDS. Thereafter, in its *Second Notice of Proposed Rulemaking*,[4] the Commission not only found widespread support for point-to-multipoint uses of the 28 GHz band, but also noted the satellite industry's reliance on the availability of this band. To address the competing demands for this spectrum, it initiated a negotiated rulemaking regarding sharing of the band by both terrestrial and satellite users. The negotiated rulemaking committee concluded, however, that there were technical obstacles that effectively precluded LMDS and FSS uplinks from sharing this spectrum. *Notice* at ¶ 15.

Having found that a technical plan for sharing common frequencies in the 28 GHz band was not reasonably feasible, the Commission now proposes a band segmentation plan which will permit both LMDS and FSS systems to operate in the 28 GHz frequency band, while at the same time accommodating feeder links for certain MSS systems. *Id.* at ¶ 1.

DISCUSSION

A. Band Splitting Proposal

The Commission has proposed to designate 850 MHz at 27.5 - 28.35 GHz to LMDS on a primary basis and to FSS on a secondary basis. *Notice* at ¶ 47. It also proposes to designate an additional 150 MHz of bandwidth, from 29.1-29.25 GHz, to LMDS, on a co-primary basis with MSS feeder links. *Id.* at ¶ 47. This proposed allocation for LMDS totals 1000 MHz.

Although 150 MHz is to be shared with MSS feeder links, the Commission believes that the limited co-frequency sharing between these two types of operations is viable, *id.* at ¶ 49, because the only agreement reached with respect to frequency sharing during the negotiated rulemaking

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pets. for recon. pending.

[4] *Local Multipoint Distribution Service*, CC Docket 92-297, *Second Notice of Proposed Rule-making*, 9 F.C.C.R. 1394 (1994) ("*Second NPRM*").

involved LMDS hub stations and subscriber receivers and MSS feeder links. *Id.* at ¶ 60. The parties appearing before the negotiated rulemaking committee reaching agreement on this issue—CellularVision, Motorola Satellite Communications, Inc., and Texas Instruments—initially agreed that subscriber transceivers would not be permitted to transmit in this shared band. *Id.* This agreement, however, was reached when spectrum sharing was still under consideration and LMDS was to operate over the entire 2 GHz range (27.5 - 29.5).

BellSouth supports the band segmentation plan for LMDS proposed by the Commission. BellSouth nevertheless opposes the proposed restriction prohibiting subscriber equipment from transmitting in the 150 MHz shared band.[5] Such a restriction would severely impact the useful bandwidth of the system, and its spectral efficiency, by requiring the use of "guardbands" to separate the upstream and downstream traffic by up to 120 MHz in the downstream 850 MHz band.[6] In addition, expensive, more complex filters and diplexers would be required in subscriber equipment before bi-directional traffic could be implemented in the 850 MHz band. A substantial increase in the cost of subscriber equipment would make the large scale deployment of such equipment economically prohibitive. These negative effects conflict with the Commission's stated goal of promoting the efficient use of scarce spectrum, *see Notice* at ¶ 5. Accordingly, the Commission should not adopt any restriction on subscriber equipment transmitting in the 150 MHz shared band.

B. Spectrum Licensing

The Commission has proposed to dedicate 1 GHz of non-contiguous spectrum for use by LMDS providers in the 28 GHz band. This decision was based upon information submitted by

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[5] *See* proposed Section 21.1019 ("LMDS licensees shall not operate transmitters from subscriber locations in the 29.1 - 29.25 GHz band.").

[6] BellSouth also would support a proposal to allot the 150 MHz band to LMDS on a primary basis and MSS on a secondary basis, while at the same time opening 27.0 - 27.5 GHz to MSS.

CellularVision, Texas Instruments, and several Bell Operating Companies, demonstrating that LMDS is not economically viable without 1 GHz of spectrum. *Notice* at ¶ 75. The Commission now seeks comment on whether it should issue only one license per geographic market for the entire 1 GHz of spectrum; issue two licenses per market, one for the 850 MHz of contiguous spectrum and one for the 150 MHz co-primary band of spectrum; or issue three licenses per market, two for 450 MHz and one for the 150 MHz co-primary portion. *Id.* at ¶¶ 78-79.

BellSouth concurs that 1,000 MHz is the *minimum* amount of spectrum necessary to support a successful LMDS system. Accordingly, any decision by the Commission to limit the aggregate amount of spectrum in the 28 GHz band available to LMDS to only 1 GHz per market necessarily means that only one license can be issued per market; multiple licenses of lesser amounts of spectrum will not support an economically viable LMDS system.

From a competitive perspective, the markets in which LMDS systems will be operating are already competitive without the need for multiple LMDS licenses. The Commission has tentatively concluded that to the extent LMDS systems are used to provide video services, LMDS will be competing in a multichannel video programming distribution ("MVPD") market. *Notice* at ¶ 77. BellSouth agrees with the Commission that the MVPD market should be defined to include "cable operators, DBS providers, wireless cable systems, satellite master antenna television systems, and video dialtone systems." *Id.* The Commission has itself recognized that "there may be significant competition facing LMDS service providers from providers of other services." *Id.* at ¶ 81.

C. Geographic Service Areas

The Commission has proposed to use the Rand McNally Basic Trading Areas ("BTAs"), which are county-based defined areas in which residents purchase goods, as the basis for defining the geographic areas within which LMDS licenses are awarded. *Notice* at ¶¶ 82, 87. BellSouth supports the Commission's proposal to define LMDS geographic service areas on the basis of BTAs.

As noted by parties commenting on the *First NPRM*, the use of BTAs will result in greater economies of scale, lead to participation by greater numbers of providers, lower interference coordination costs among LMDS providers, and increase capital returns due to the larger customer base.[7]

The Commission has also proposed geographic partitioning in this proceeding, whereby an LMDS licensee would be able to partially assign its license in a portion of its service area. *Notice* at ¶ 89. Such partitioning would enable service to reach the public on a faster basis than if the build-out of a particular geographic area is solely the responsibility of one licensee. BellSouth supports this proposal, but believes it should apply to all licensees, and not be restricted to only licensees serving rural areas as is the case in Broadband PCS. BellSouth agrees with the Commission that in comparison to PCS, LMDS providers will face greater construction costs, more limited service areas due to the fixed nature of LMDS, and technology and equipment that is not presently commercially available. *Id.* at ¶ 90. All of these factors combine to inhibit the build-out of LMDS systems in all areas, not just rural areas. For this reason, BellSouth believes that geographic partitioning for *any* license area is appropriate to "ensure the speedy implementation of services," *see Band Plan for LMDS*, Report No. DC 95-100 at 2, and that such partitioning should not be limited to rural areas.

D. LMDS Services and Regulation

The Commission has proposed three different alternatives for regulating LMDS licensees. Under the first option, LMDS licensees would be presumed to be common carriers subject to Title II regulation, to the extent that data, voice, and other two-way telecommunications services are

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[7] *See, e.g.*, Comments of BellSouth, United States Telephone Association, GTE Service Corporation, M3 Illinois Telecommunications Corporation, NYNEX Mobile Communications Company, and Sprint Corporation.

offered. *Notice* at ¶ 94. Under the second option, successful LMDS bidders would specify in their applications the types of services to be offered and the regulatory status under which they would be offered. *Id.* at ¶ 95. Under the third option, LMDS licensees would be treated in the manner in which Multichannel Multipoint Distribution Service ("MMDS") licensees are regulated. *Id.* at ¶ 96.

BellSouth supports the Commission's second proposal to allow successful LMDS bidders to specify the type of service to be offered and their applicable regulatory status. Because the development of LMDS services and technologies is still in its infancy, the Commission should not prejudge the regulatory status of the services that have yet to evolve. Choosing this flexible option will advance "the Commission's goals of ensuring that the communications needs of the public are met by allowing marketplace forces to shape the development of service providers." *First NPRM*, 8 F.C.C.R. at 561.[8] Further, the Commission has already allowed service providers in other services to elect common carrier or non-common carrier status. *Id.*

However, a service provider's decision to elect common carrier or non-common carrier status is irrelevant unless the service provider actually operates consistently with that choice. Accordingly, BellSouth agrees that licensees should be required to describe the service they propose to offer in sufficient detail for the FCC to confirm that the status elected is consistent with how the service provider actually will operate. *Notice* at ¶ 95. As the Commission noted, it will also "retain oversight of the parties' compliance with the statutory and judicial standards for status based on the type of service offered." *Id.*[9]

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[8] *See Wold Communications, Inc. v. FCC*, 735 F.2d 1465 (D.C. Cir. 1984); *Domestic Fixed-Satellite Transponder Sales*, 90 F.C.C.2d 1238 (1982); *Revision to Part 21, Report and Order*, 2 F.C.C.R. 4251, 4253 (1987).

[9] *See National Association of Regulatory Utility Commissioners v. FCC*, 525 F.2d 630, 638 (D.C. Cir.), *cert. denied*, 425 U.S. 992 (1976).

E. Eligibility

In its *First NPRM*, the Commission proposed not to adopt restrictions of the ownership of LMDS licenses. 8 F.C.C.R. at 563. The Commission now seeks additional comment on this issue. For the reasons stated below, BellSouth submits that there should be open eligibility for LMDS licenses and that no class of potential provider should be excluded.

At the time the *First NPRM* was issued, the evidence before the Commission suggested that the likely first use of the 28 GHz band for LMDS would be video entertainment programming. The Commission concluded, however, that "[t]here is no assurance that this will be the case, or that even if it is the predominant use, that it will be the most viable use in all geographic areas." 8 F.C.C.R. at 563. In view of that uncertainty, the Commission declined to exclude any video distribution or telecommunications firm from constructing or operating 28 GHz facilities. *Id.*

In the *Notice*, the Commission stated that it now expects that LMDS providers may combine such traditionally separate services as telephony, video services, data transfers, and interactive transactions. *Notice* at ¶¶ 27-28. To the extent LMDS systems are used to provide video services, the Commission believes LMDS will be competing in an MVPD market which includes "cable operators, DBS providers, wireless cable systems, satellite master antenna television systems, and video dialtone systems." *Id.* at ¶ 77. Given the now vastly expanded, but as yet uncertain, types of services which may be offered under the umbrella of LMDS in the 28 GHz band, BellSouth believes that the Commission should not exclude any potential class of provider from the ownership of LMDS licenses, particularly where the Commission has stated that its intent is to "foster the most diversity in services and technology possible in the provision of LMDS." *Id.* at ¶ 115.

The Commission specifically seeks comment on the competitive consequences of the acquisition of a BTA service area by an Local Exchange Carrier ("LEC") operating in the same area. *Id.* at ¶ 101. As stated, BellSouth believes that no class of providers, including LECs, should be

excluded from LMDS eligibility. From a competitive standpoint, LECs do not possess monopoly power with regard to LMDS and would have no bottleneck power through the provision of LMDS. The Commission has already stated that LMDS will be competing in an MVPD market which is populated today with a variety of competitors. *Id.* at ¶ 77. This market is already competitive; LEC participation would only significantly increase competition.

Similarly, BellSouth supports open eligibility for cable operators. *Id.* at ¶ 104. Because the relevant market for LMDS is already competitive, there is no reason to exclude cable operators.[10] To the extent the Commission decides to exclude cable operators from holding an LMDS license, however, the exclusion should only be applied to dominant cable providers. MMDS licensees also should not be excluded from acquiring an LMDS license within their service area. *See id.* at ¶ 107.

The Commission also seeks comment on whether it should limit the extent to which a Commercial Mobile Radio Services ("CMRS") provider can acquire LMDS spectrum in its local service area. *Id.* at ¶ 102. The Commission is correct in its tentative conclusion that, because LMDS spectrum cannot be used to provide *mobile* radio services, the acquisition of LMDS spectrum by a CMRS provider would not raise competitive concerns. *Id.* at ¶ 102. Accordingly, BellSouth supports the Commission's proposal of exempting LMDS spectrum from the CMRS spectrum cap of 45 MHz.

F. Regulation of Common Carriers

In light of recent decisions of the U.S. Court of Appeals for the District of Columbia Circuit holding that the Commission is mandated by statute to require all telephone common carriers to file

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[10] BellSouth agrees with the Commission and other commenters that there are no statutory or regulatory restrictions that would prohibit a cable operator from holding a LMDS license. *See Notice* at ¶ 104.

schedules showing all charges, regardless of size or market power,[11] BellSouth recognizes that statutory requirements pertaining to common carriers must be applied to LMDS licensees who offer common carrier LMDS services not classified as CMRS. BellSouth believes, however, that Section 214 filings should not be necessary for LMDS. In fact, the Commission has previously held that a "radio station authorization constitutes the Section 214 authorization."[12] If, however, the Commission determines that Section 214 filings will be required for common carrier LMDS services, BellSouth believes that streamlined filing provisions should be developed and implemented. *Notice* at ¶ 109.

G. Construction Requirements

The Commission initially proposed an aggressive build-out requirement of ninety percent coverage of an LMDS licensee's service area within three years. *First NPRM*, 8 F.C.C.R. at 562-63. The vast majority of commenting parties opposed this requirement. In its *Notice*, the Commission stated that "[w]e are persuaded by parties' arguments that strict build-out requirements may hamper [the development of LMDS] by driving licensees to the few existing manufacturers and not allowing room for additional technological development." *Notice* at ¶115. Nevertheless, the Commission still proposes a build-out requirement of service to one-third of the population within an LMDS licensee's service area within five years of a license grant, and service to two-thirds of the

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[11] *See Southwestern Bell Corp. v. FCC*, 43 F.3d 1515 (D.C. Cir. 1995); *AT&T v. FCC*, 978 F.2d 727 (D.C. Cir. 1992), *cert. denied sub nom. MCI Telecommunications Corp. v. AT&T*, 113 S. Ct. 3020 (1993).

[12] *W. Lee Simmons, Inc., Memorandum Opinion and Order*, 2 F.C.C.R. 4290 (1987); *see Communications Satellite Corp.*, Docket No. 18719, *Memorandum Opinion and Order*, 20 F.C.C.2d 405, 411 (1969) ("Where an application is made for radio authorization which covers the entire service proposed, and all particulars thereof, no separate section 214 application is necessary."); *TransAmerican Microwave, Inc., Memorandum Opinion and Order*, 9 F.C.C.2d 159, 162 (1967) ("Section 214 is interpreted as being inapplicable where application is made for radio facilities, and such radio station authorizations cover the entire use to which the service will be put.").

population within ten years from grant. *Id.* at ¶ 117 BellSouth opposes such a build-out requirement for LMDS.

As noted by the Commission, the auction procedure to be used to award LMDS licenses makes the need for a build-out requirement less necessary, since auctions will prevent the warehousing of LMDS spectrum. *Id.* at ¶ 116. Moreover, LMDS technology is too immature at this time to predict the availability of equipment which would be required to meet the proposed build-out requirements. In addition, the types of services to be provided by LMDS licensees are also not yet fully defined, and therefore it is impossible to define what types of service must be provided to the public within the proposed time frames. A build-out requirement early in the license term would force licensees to adopt the most readily available technology, regardless of its merits vis-à-vis other technologies, and would also give licensees an incentive to provide the most easily implemented forms of service. This would act to discourage the development of new, innovative services that have a longer lead time than video delivery, for example, and would thereby diminish the diversity of both the technologies used and the services provided.

In addition, signals operating in the 28 GHz band are vulnerable to attenuation from foliage, terrain, and other obstacles that will limit the economic coverage of significant portions of some markets. A single nationwide build-out requirement fails to consider the unique geographic limitations influencing the build-out potential in this 28 GHz band.

Finally, the decision to impose build-out requirements could lead to a devaluation of the LMDS licenses and/or a reduced level of participants in LMDS auctions if prospective entrants view the build-out requirements as economically or technologically not attainable within the chosen time frames.

H. Technical Rules

The Commission has proposed that each LMDS licensee coordinate its operation with other entities licensed to provide service in the same geographic areas in order to avoid interference. *Notice* at ¶¶119-21. BellSouth supports the Commission's proposal to require that applicants coordinate frequencies among themselves at their service area boundaries ("SABs"), although it recognizes that this coordination will be very time-consuming, since every hub and/or subscriber path at the SAB would require coordination. Nevertheless, it believes this method is preferable to the power flux density ("PFD") proposal, whereby the Commission would set a maximum PFD at the SABs. Although the PFD method is simpler, it would be problematic in an environment where the equipment has not been standardized between adjacent service providers. BellSouth also agrees that the coordination process would be advanced by employing orthogonally-polarized signals.

With regard to the equivalent isotropically radiated power ("EIRP") limits proposed by the Commission, *Notice* at ¶¶ 122-23, BellSouth supports a hub-to-subscriber maximum EIRP for LMDS of -52 dBW/Hz. However, in the subscriber-to-hub link, a maximum EIRP of -18 dBW/Hz is desired due to high gain subscriber antennas and the point-to-point nature of the transmission. Current designs are based on an EIRP in the -35 to -40 dBW/Hz range, which can be marginal under certain conditions, primarily rain. It would be desirable from a system quality standpoint to increase the subscriber-to-hub EIRP by using, still to be developed, higher power amplifiers in subscriber transceivers.

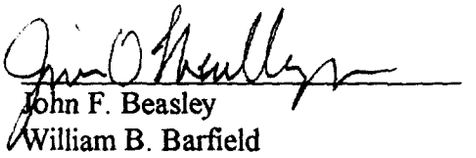
Finally, the FCC's rules currently require digital modulated systems to comply with a spectral efficiency of at least 1.0 bps/hz. BellSouth agrees with the Commission, *see Notice* at ¶ 124, that this is a reasonable measure of a minimum spectral efficiency and will not be an administrative burden. BellSouth believes the minimum digital modulated system efficiency requirement of at least 1.0 bps/hz is the best gauge available for LMDS today.

CONCLUSION

For the foregoing reasons, BellSouth urges the Commission to adopt the policies and rules governing LMDS set forth above.

Respectfully submitted,

BELLSOUTH CORPORATION
BELLSOUTH TELECOMMUNICATIONS, INC.
BELLSOUTH ENTERPRISES, INC.

By: 

John F. Beasley
William B. Barfield
Jim O. Llewellyn
1155 Peachtree Street, N.E., Suite 1800
Atlanta, Georgia 30309-3610
(404) 249-4445

Charles P. Featherstun
David G. Richards
1133 21st Street, N.W., Suite 900
Washington, D.C. 20036
(202) 463-4132

Their Attorneys

September 7, 1995

CERTIFICATE OF SERVICE

I, Craig E. Gilmore, hereby certify that copies of the foregoing "Comments of BellSouth" have been hand-served this 7th day of September 1995, on the following:

The Honorable Reed E. Hundt
Chairman
Federal Communications Commission
1919 M Street, N.W., Room 814
Washington, D.C. 20554

The Honorable James H. Quello
Federal Communications Commission
1919 M Street, N.W., Room 802
Washington, D.C. 20554

The Honorable Susan Ness
Federal Communications Commission
1919 M Street, N.W., Room 832
Washington, D.C. 20554

The Honorable Andrew C. Barrett
Federal Communications Commission
1919 M Street, N.W., Room 826
Washington, D.C. 20554

The Honorable Rachelle B. Chong
Federal Communications Commission
1919 M Street, N.W., Room 844
Washington, D.C. 20554

Craig E. Gilmore